AMENDMENTS TO THE SPECIFICATION

Replace the paragraph starting at page 6, line 3, and ending at page 6 line 6 with the following amended paragraph.

To tune the chemistry of the sol, the concentration of the surfactant, water, ethanol, TEOS, and organic monomers can be varied. Through variation of the nature of the surfactant and its concentration, various structures for the inorganic layers **102** and organic layers **104**, such as lamellar layers, tubules, or nanostructures exhibiting 1- and 3-dimensional connectivity (e.g., hexagonal or cubic) of the constituent phases, respectively, can be produced and the characteristic dimension (d-spacing) of the composite architecture controlled. Through variation of the organic and inorganic precursors, a wide range of materials combinations can be prepared. Annealing the films at about 125°C-150°C or greater (and/or below the decomposition temperature of the organic materials) further densifies the siloxane material and improves impermeability.